

SEQUENCE LISTING

<110> Flasinski, Stanislaw

<120> Methods for Using Artificial Polynucleotides and Compositions thereof to Reduce Transgene Silencing

<130> 11899.0235.PCUS00

<140> PCT/US 03/21551

<141> 2003-07-10

<150> US 06/396,665

<151> 2002-07-18

<160> 35

<170> PatentIn version 3.3

<210> 1

<211> 515

<212> PRT

<213> Oryza sativa

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Ser Val Ala	Ala Pro Ala	Ala Lys Ala	Glu Glu Ile
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Ile Arg Glu	Ile Ser Gly	Ala Val Gln	Leu Pro Gly
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Ser Asn Arg	Ile Leu Leu	Leu Ser Ala	Leu Ser Glu
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Val Asp Asn	Leu Leu Asn	Ser Glu Asp	Val His Tyr
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Leu Lys Ala	Leu Gly Leu	Ser Val Glu	Ala Asp Lys
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Ala Val Val	Val Gly Cys	Gly Gly Lys	Phe Pro Val
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Lys Glu Glu	Val Gln Leu	Phe Leu Gly	Asn Ala Gly
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Ser Leu Thr	Ala Ala Val	Thr Ala Ala	Gly Gly Asn
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Leu Asp Gly Val Pro Arg Met Arg Glu Arg Pro Ile Gly Asp Leu Val
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 Val Gly Leu Lys Gln Leu Gly Ala Asp Val Asp Cys Phe Leu Gly Thr
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 Glu Cys Pro Pro Val Arg Val Lys Gly Ile Gly Gly Leu Pro Gly Gly
 225 230 235 240
 Lys Val Lys Leu Ser Gly Ser Ile Ser Ser Gln Tyr Leu Ser Ala Leu
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 Leu Met Ala Ala Pro Leu Ala Leu Gly Asp Val Glu Ile Glu Ile Ile
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 Glu Arg Phe Gly Val Lys Ala Glu His Ser Asp Ser Trp Asp Arg Phe
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 Glu Gly Asp Ala Ser Ser Ala Ser Tyr Phe Leu Ala Gly Ala Ala Ile
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 Thr Trp Thr Asp Thr Ser Val Thr Val Thr Gly Pro Pro Arg Glu Pro
 370 375 380
 Tyr Gly Lys Lys His Leu Lys Ala Val Asp Val Asn Met Asn Lys Met
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 405 410 415
 Pro Thr Ala Ile Arg Asp Val Ala Ser Trp Arg Val Lys Glu Thr Glu
 420 425 430
 Arg Met Val Ala Ile Arg Thr Glu Leu Thr Lys Leu Gly Ala Ser Val
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 Glu Glu Gly Pro Asp Tyr Cys Ile Ile Thr Pro Pro Glu Lys Leu Asn
 450 455 460
 Ile Thr Ala Ile Asp Thr Tyr Asp Asp His Arg Met Ala Met Ala Phe
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Ser	Leu	Arg	Pro	Arg	Leu	Trp	Gly	Ala	Ser	Lys	Ser	Arg	Ile	Pro	Met
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His	Lys	Asn	Gly	Ser	Phe	Met	Gly	Asn	Phe	Asn	Val	Gly	Lys	Gly	Asn
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Ser	Gly	Val	Phe	Lys	Val	Ser	Ala	Ser	Val	Ala	Ala	Ala	Glu	Lys	Pro
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Ser	Thr	Ser	Pro	Glu	Ile	Val	Leu	Glu	Pro	Ile	Lys	Asp	Phe	Ser	Gly
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Ser	Glu	Asp	Ile	His	Tyr	Met	Leu	Gly	Ala	Leu	Arg	Thr	Leu	Gly	Leu
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Val	Asn	Gly	Lys	Gly	Gly	Leu	Pro	Gly	Gly	Lys	Val	Lys	Leu	Ser	Gly
				245					250					255	
Ser	Val	Ser	Ser	Gln	Tyr	Leu	Thr	Ala	Leu	Leu	Met	Ala	Ala	Pro	Leu
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 Val Glu His Ser Gly Asn Trp Asp Arg Phe Leu Val His Gly Gly Gln
 305 310 315 320
 Lys Tyr Lys Ser Pro Gly Asn Ala Phe Val Glu Gly Asp Ala Ser Ser
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 Ala Ser Tyr Leu Leu Ala Gly Ala Ala Ile Thr Gly Gly Thr Ile Thr
 340 345 350
 Val Asn Gly Cys Gly Thr Ser Ser Leu Gln Gly Asp Val Lys Phe Ala
 355 360 365
 Glu Val Leu Glu Lys Met Gly Ala Lys Val Thr Trp Ser Glu Asn Ser
 370 375 380
 Val Thr Val Ser Gly Pro Pro Arg Asp Phe Ser Gly Arg Lys Val Leu
 385 390 395 400
 Arg Gly Ile Asp Val Asn Met Asn Lys Met Pro Asp Val Ala Met Thr
 405 410 415
 Leu Ala Val Val Ala Leu Phe Ala Asn Gly Pro Thr Ala Ile Arg Asp
 420 425 430
 Val Ala Ser Trp Arg Val Lys Glu Thr Glu Arg Met Ile Ala Ile Cys
 435 440 445
 Thr Glu Leu Arg Lys Leu Gly Ala Thr Val Glu Glu Gly Pro Asp Tyr
 450 455 460
 Cys Val Ile Thr Pro Pro Glu Lys Leu Asn Val Thr Ala Ile Asp Thr
 465 470 475 480
 Tyr Asp Asp His Arg Met Ala Met Ala Phe Ser Leu Ala Ala Cys Gly
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Glu	Met	Thr	Leu	Arg	Leu	Met	Glu	Arg	Phe	Gly	Val	Lys	Ala	Glu	His	
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Ser	Asp	Ser	Trp	Asp	Arg	Phe	Tyr	Ile	Lys	Gly	Gly	Gln	Lys	Tyr	Lys	
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Ser	Pro	Lys	Asn	Ala	Tyr	Val	Glu	Gly	Asp	Ala	Ser	Ser	Ala	Ser	Tyr	
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Phe	Leu	Ala	Gly	Ala	Ala	Ile	Thr	Gly	Gly	Thr	Val	Thr	Val	Glu	Gly	
				325					330					335		
Cys	Gly	Thr	Thr	Ser	Leu	Gln	Gly	Asp	Val	Lys	Phe	Ala	Glu	Val	Leu	
			340					345					350			
Glu	Met	Met	Gly	Ala	Lys	Val	Thr	Trp	Thr	Glu	Thr	Ser	Val	Thr	Val	
		355					360					365				
Thr	Gly	Pro	Pro	Arg	Glu	Pro	Phe	Gly	Arg	Lys	His	Leu	Lys	Ala	Ile	
	370					375					380					

Asp Val Asn Met Asn Lys Met Pro Asp Val Ala Met Thr Leu Ala Val	
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Trp Arg Val Lys Glu Thr Glu Arg Met Val Ala Ile Arg Thr Glu Leu	
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Thr Lys Leu Gly Ala Ser Val Glu Glu Gly Pro Asp Tyr Cys Ile Ile	
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Thr Pro Pro Glu Lys Leu Asn Val Thr Ala Ile Asp Thr Tyr Asp Asp	
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His Arg Met Ala Met Ala Phe Ser Leu Ala Ala Cys Ala Glu Val Pro	
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Val Thr Ile Arg Asp Pro Gly Cys Thr Arg Lys Thr Phe Pro Asp Tyr	
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 <213> Zea mays

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 <212> DNA
 <213> Zea mays

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<210> 11
 <211> 76
 <212> PRT
 <213> Arabidopsis thaliana

<400> 11

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 Ile Ser Asn Leu Ser Lys Ser Ser Gln Arg Lys Ser Pro Leu Ser Val
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 Ser Leu Lys Thr Gln Gln His Pro Arg Ala Tyr Pro Ile Ser Ser Ser
 35 40 45
 Trp Gly Leu Lys Lys Ser Gly Met Thr Leu Ile Gly Ser Glu Leu Arg
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 Pro Leu Lys Val Met Ser Ser Val Ser Thr Ala Cys
 65 70 75

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 <212> DNA
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 cgagcttata cgatttcgtc gtcgtgggga ttgaagaaga gtgggatgac gttaattggc 180
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<210> 13
 <211> 228
 <212> DNA
 <213> Arabidopsis thaliana

<400> 13
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 agggccttatc ccattctcaag ctctctgggggt ctaaagaaaa gtggaatgac actgatcggg 180
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<210> 14
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 <212> DNA
 <213> Arabidopsis thaliana

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 agggcctacc ctatcagctc atcctggggc ctcaagaaga gtggcatgac gctgatcggc 180
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<210> 15
 <211> 455
 <212> PRT
 <213> Agrobacterium tumefaciens

<400> 15

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Arg	Ser	Phe	Met	Phe	Gly	Gly	Leu	Ala	Ser	Gly	Glu	Thr	Arg	Ile	Thr	35	40	45	
Gly	Leu	Leu	Glu	Gly	Glu	Asp	Val	Ile	Asn	Thr	Gly	Lys	Ala	Met	Gln	50	55	60	
Ala	Met	Gly	Ala	Arg	Ile	Arg	Lys	Glu	Gly	Asp	Thr	Trp	Ile	Ile	Asp	65	70	75	80
Gly	Val	Gly	Asn	Gly	Gly	Leu	Leu	Ala	Pro	Glu	Ala	Pro	Leu	Asp	Phe	85	90	95	
Gly	Asn	Ala	Ala	Thr	Gly	Cys	Arg	Leu	Thr	Met	Gly	Leu	Val	Gly	Val	100	105	110	
Tyr	Asp	Phe	Asp	Ser	Thr	Phe	Ile	Gly	Asp	Ala	Ser	Leu	Thr	Lys	Arg	115	120	125	
Pro	Met	Gly	Arg	Val	Leu	Asn	Pro	Leu	Arg	Glu	Met	Gly	Val	Gln	Val	130	135	140	
Lys	Ser	Glu	Asp	Gly	Asp	Arg	Leu	Pro	Val	Thr	Leu	Arg	Gly	Pro	Lys	145	150	155	160
Thr	Pro	Thr	Pro	Ile	Thr	Tyr	Arg	Val	Pro	Met	Ala	Ser	Ala	Gln	Val	165	170	175	

Lys Ser Ala Val Leu Leu Ala Gly Leu Asn Thr Pro Gly Ile Thr Thr
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 Gly Phe Gly Ala Asn Leu Thr Val Glu Thr Asp Ala Asp Gly Val Arg
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 Thr Ile Arg Leu Glu Gly Arg Gly Lys Leu Thr Gly Gln Val Ile Asp
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 Thr Arg Thr Gly Leu Ile Leu Thr Leu Gln Glu Met Gly Ala Asp Ile
 275 280 285
 Glu Val Ile Asn Pro Arg Leu Ala Gly Gly Glu Asp Val Ala Asp Leu
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 Arg Val Arg Ser Ser Thr Leu Lys Gly Val Thr Val Pro Glu Asp Arg
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 Ala Pro Ser Met Ile Asp Glu Tyr Pro Ile Leu Ala Val Ala Ala Ala
 325 330 335
 Phe Ala Glu Gly Ala Thr Val Met Asn Gly Leu Glu Glu Leu Arg Val
 340 345 350
 Lys Glu Ser Asp Arg Leu Ser Ala Val Ala Asn Gly Leu Lys Leu Asn
 355 360 365
 Gly Val Asp Cys Asp Glu Gly Glu Thr Ser Leu Val Val Arg Gly Arg
 370 375 380
 Pro Asp Gly Lys Gly Leu Gly Asn Ala Ser Gly Ala Ala Val Ala Thr
 385 390 395 400
 His Leu Asp His Arg Ile Ala Met Ser Phe Leu Val Met Gly Leu Val
 405 410 415
 Ser Glu Asn Pro Val Thr Val Asp Asp Ala Thr Met Ile Ala Thr Ser
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 Phe Pro Glu Phe Met Asp Leu Met Ala Gly Leu Gly Ala Lys Ile Glu
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<210> 16

<211> 1368

<212> DNA

<213> Agrobacterium tumefaciens

<400> 16

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gcgagcgggtg aaacgcgcac caccggcctt ctggaaggcg aggacgtcat caatacgggc	180
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<210> 17

<211> 1368

<212> DNA

<213> Agrobacterium tumefaciens

<400> 17

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<210> 18

<211> 1368

<212> DNA

<213> Agrobacterium tumefaciens

<400> 18

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<210> 19
<211> 183
<212> PRT
<213> Streptomyces hygroscopicus

<400> 19

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		35					40					45			
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Asp	Gly	Glu	Val	Ala	Gly	Ile	Ala	Tyr	Ala	Gly	Pro	Trp	Lys	Ala	Arg
65					70					75					80
Asn	Ala	Tyr	Asp	Trp	Thr	Ala	Glu	Ser	Thr	Val	Tyr	Val	Ser	Pro	Arg
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His	Gln	Arg	Thr	Gly	Leu	Gly	Ser	Thr	Leu	Tyr	Thr	His	Leu	Leu	Lys
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Ser	Leu	Glu	Ala	Gln	Gly	Phe	Lys	Ser	Val	Val	Ala	Val	Ile	Gly	Leu
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Pro	Asn	Asp	Pro	Ser	Val	Arg	Met	His	Glu	Ala	Leu	Gly	Tyr	Ala	Pro
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Arg Gly Met Leu Arg Ala Ala Gly Phe Lys His Gly Asn Trp His Asp
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Val Leu Pro Val Thr Glu Ile
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<210> 20
 <211> 552
 <212> DNA
 <213> Streptomyces hygroscopicus

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 <213> Streptomyces hygroscopicus

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<210> 25
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<400> 34

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<210> 35
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